



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/995,665

11/29/2001

Su-Woong Lee

8733.538.00

2645

30827 7590 10/24/2007
MCKENNA LONG & ALDRIDGE LLP
1900 K STREET, NW
WASHINGTON, DC 20006

EXAMINER

NGUYEN, JOSEPH H

ART UNIT

PAPER NUMBER

2815

MAIL DATE

DELIVERY MODE

10/24/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/995,665	Applicant(s) LEE, SU-WOONG	
	Examiner Joseph Nguyen	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7-12 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over figures 1-2 of acknowledged prior art (APA) in view of Ando (JP-09-138417) and further in view of Watanabe et al. (JP 61-45225).

Regarding claims 1 and 7, 8, applicant discloses in figures 1-3 of (APA) a seal pattern of a liquid crystal display device (a method of forming a seal pattern of a liquid crystal display) comprising a substrate 10 having a plurality of unit cell regions A, B, C, D, E, F; a plurality of main seal patterns 21 on the substrate, each main seal pattern being formed at a boundary of a corresponding unit cell region; and a first sub-seal pattern 31 surrounding all of the main seal patterns (See pages 6-7 of the instant application). Figures 1-2 of (APA) do not show each main seal pattern is not formed at a boundary of a corresponding unit cell region for one unit cell region and a first sub-seal pattern having a plurality of open portions. However, Ando discloses in figure 1 each main seal pattern 33 is not formed at a boundary of a corresponding unit cell region for one unit cell region and a first sub-seal pattern 31 having a plurality of open portions such that the infiltration of moisture and foreign matter into the cells at the time of

Art Unit: 2815

cutting substrates is prevented (See English Abstract). In view of such teaching, it would have been obvious at the time of the present invention to modify figures 1-3 of (APA) by including each main seal pattern not being formed at a boundary of a corresponding unit cell region for one unit cell region and a first sub-seal pattern having a plurality of open portions such that the infiltration of moisture and foreign matter into the cells at the time of cutting substrates is prevented. Further, APA and Ando do not show a plurality of additional seal patterns at the open portions. However, Watanabe et al. shows in figure 2 a plurality of additional seal patterns 6 at the open portions 4 to improve the reliability of liquid crystal element (See CONSTITUTION). In view of such teaching, it would have been obvious at the time of the present invention to modify (APA) and Ando by including a plurality of additional seal patterns 6 at the open portions 4 to improve the reliability of liquid crystal element.

Regarding claims 2 and 9, figure 3 of (APA) shows the unit cell regions A, B, C, D, E, F are arranged in one of a plurality of columns and a plurality of rows.

Regarding claims 3 and 10, figure 3 of (APA) shows the main seal pattern 21 is formed at a boundary of the one of a plurality of columns and a plurality of rows.

Regarding claims 4 and 11, figure 3 of (APA) shows a second sub-seal pattern 32 between the unit cell regions.

Regarding claims 5 and 12, Ando shows in figure 1 the open portions in the unit cell region having no main seal pattern.

Regarding claims 15-16, applicant discloses in paragraph [0016] of the instant application etching the substrate using an etchant, which is hydrofluoric acid.

Claims 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over figures 1-2 of acknowledged prior art (APA) in view of JP 5-249422 and further in view of Watanabe et al. (JP 61-45225).

Regarding claim 17, (APA) discloses in figure 3 a seal pattern of a liquid crystal display device comprising a glass substrate 10 having a plurality of unit cell regions; a plurality of main seal patterns 21 on the substrate, each main seal pattern being formed at a boundary of a corresponding one of the unit cell regions; plurality of injection holes 22 each formed at a lower center portion of a corresponding main seal pattern; a first subs seal pattern 31 surrounding all of the main seal patterns and having a plurality of air vent portions; a plurality of additional seal patterns 33 for air ventilation each formed at a corresponding air vent portion; and a second sub seal pattern 33 having a plurality of open portions. (APA) does not disclose each main seal pattern being formed at a boundary of a corresponding unit cell region except for at least one middle unit cell region. However, JP5-249422 discloses in figure 2 each main seal pattern 13 being formed at a boundary of a corresponding unit cell region except for at least one middle unit cell region 13a. In view of such teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify (APA) by having each main seal pattern being formed at a boundary of a corresponding unit cell region

except for at least one middle unit cell region for the purpose of reducing the thickness of the substrate at a good yield as taught by JP5-249422.

Note that applicant admitted on page 6 of the instant application that the sub-seal patterns 31, 32, 33 also function as air vent. Therefore, these patterns are also considered air vents herein.

Regarding claims 18, 21-22, (APA) and JP5-249422 and Watanabe et al. together disclose all the structures and steps of the method set forth in the claimed invention.

Regarding claim 19, (APA) and JP5-249422 and Watanabe et al. together disclose substantially all the structures set forth in the claimed invention except the width of the plurality of seal patterns for air ventilation being about 1.5 to 2 mm. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify (APA) and JP5-249422 and Watanabe et al. by having the width of the plurality of seal patterns for air ventilation being about 1.5 to 2 mm for the purpose of improving the performance of a liquid crystal display device, since it has been held that where the general conditions of a claim are disclosed in the prior art discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 20, (APA) and JP5-24942 and Watanabe et al. together disclose substantially all the structures set forth in the claimed invention except the length of the plurality of seal patterns for air ventilation being about 70 to 100 mm. However, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify (APA) and JP5-249422 and Watanabe et al. by having the length of the plurality of seal patterns for air ventilation being about 70 to 100 mm for the purpose of improving the performance of a liquid crystal display device, since it has been held that where the general conditions of a claim are disclosed in the prior art discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

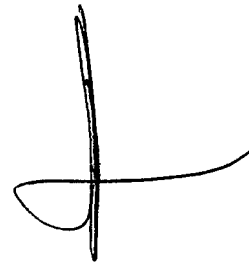
Response to Arguments

Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Nguyen whose telephone number is (571) 272-1734. The examiner can normally be reached on Monday-Friday, 8:30 am- 5:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, consisting of a vertical line with a horizontal stroke crossing it near the bottom, and a curved line extending from the horizontal stroke.

KENNETH PARKER
SUPERVISORY PATENT EXAMINER

Joseph Nguyen

Patent Examiner

October 15, 2007.